PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re:	Patent application of Scott W. Huffer, *et al.*	:	Group Art Unit: 1772
Serial No.:	09/778,334	:	Examiner: Sandra M. Rayford
Filed:	February 7, 2001	:	
For:	PACKAGING MATERIAL, METHOD OF MAKING IT, AND PACKAGE MADE THEREFROM	:	Attorney Docket No.: 9325-36 (148068)

DECLARATION OF SCOTT W. HUFFER
SUBMITTED PURSUANT TO 37 C.F.R. 1.132

I, Scott Huffer, hereby declare as follows:

1. I am a Research and Development Associate with the Packaging Development Center of Sonoco Products Company of Hartsville, South Carolina ("Sonoco"). I have a B.S. in Chemical Engineering and nineteen years of experience in the printing and converting industry.

2. I understand that this declaration is to be submitted to the U.S. Patent Office as part of a response to the office action mailed on January 31, 2005 in the above-referenced application.

3. Sonoco has produced a packaging material in accordance with this application.

4. The packaging material is currently being used commercially as a candy wrapper.

5. The packaging material includes a substrate of plastic material, which is printed and coated with an energy curable coating on the outside surface. A cold seal cohesive is applied to a portion of the inside surface.

6. The energy curable coating includes oligomers and monomers that form a stable network when cured with a suitable energy. The coating also includes a slip agent that, during energy curing of the coating, reacts into the oligomer/monomer network, thereby becoming fixed or "reacted-in". Reacting-in occurs when carbon-carbon double bonds of the slip agent and the

coating are broken, resulting in the linking and polymerizing of the slip agent with the energy-cured coating.

7. Suitable energies that will cause the slip agent to become reacted-in include electron beam radiation and ultraviolet radiation.

8. Thermal treatment, no matter the temperature, will not break the carbon-carbon double bonds in the slip agent. Thus, thermal treatment will not cause the slip agent to become reacted-in.

9. The reacting-in of the slip agent results in a energy-cured layer that maintains high gloss and other aesthetically pleasing qualities while also serving as a release layer for the cold-seal cohesive. The cold seal cohesive (i) remains attached to the inner side of the substrate, (ii) does not offset onto the energy-cured coating, and (iii) does not remove a portion of the energy-cured coating when the material is unrolled after being stored in a roll. Thus, the cohesive is not deadened as a result of contact with the energy-cured coating.

10. The properties exhibited by the energy cured coating with a reacted-in slip agent of the present invention would not be expected of a coating having migratory slip agents. Migratory slip agents are selected for their incompatibility with the resin in which they are dispersed. Due to this incompatibility, the slip agents migrate to the surface of the structure, where they form a thin film. This process is known as blooming. The concentration of slip agents at the surface imparts a desired coefficient of friction to a laminate. However, the concentration forms a haze and adversely affects the gloss of the coating. In addition, if the coated material has a cold seal cohesive coating on the opposite side, the migratory slip agents would have a tendency to poison the cold seal cohesive and cause it to deaden when the coated material is stored in a roll.

11. Those skilled in the art of converting understand that migratory slip agents would not become reacted-in during curing of an energy curable coating. Rather, migratory slip agents, if used in an energy cured coating, would bloom out of the coating in the same manner as they do in a conventional solvent-based coating or resin.

12. The properties exhibited by the energy cured coating with a reacted-in slip agent of the present invention would not be expected of a coating having non-migratory slip agents such as the ones disclosed in US 5,792,549 to Wilkie (i.e., inorganics such as talcs, silicas (e.g., micron sized silicas), glass beads, diatomaceous earth, clay, and the like). The non-migratory slip agents disclosed in Wilkie are particles that are merely suspended in the coating. The particles are not reacted-in to the coating and would not be reacted-in if energy were to be applied to the coating. The particles create a rough surface on the coating that provides improved release properties by way of mechanical slip. In other words, the non-migratory slip agents improve release properties by limiting the surface area of the coating onto which another surface can contact. Less surface to surface contact between the coating and the other surface means less friction between the two surfaces, which, in turn, results in improved release properties. However, the rough surface (created to improve release properties) reduces the gloss of the coating. Also, because the coatings in Wilkie rely merely on mechanical slip to achieve the desired release properties, the portion of the coating that does come into contact with a cold seal cohesive (e.g., when in a roll) may still deaden the cold seal cohesive by offsetting onto the cold seal cohesive or by having the cold seal cohesive offset onto it. To limit these problems, migratory slip agents may be added to the coating of Wilkie, further reducing the gloss of the coating and deadening the cold seal cohesive as described above.

13. In contrast to the non-migratory slip agents of Wilkie, the reacted-in slip agents claimed in the present invention allow the energy-cured coating to have a very high gloss and an attractive appearance rivaling, if not exceeding, that of a laminated outer web, while, at the same time, obtaining the desired release properties.

14. Those skilled in the art of converting understand that the non-migratory slip agents of Wilkie would not become reacted-in during curing of an energy curable coating.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 4/27/05

Scott W. Huffer
Research and Development Associate
Sonoco Products Company